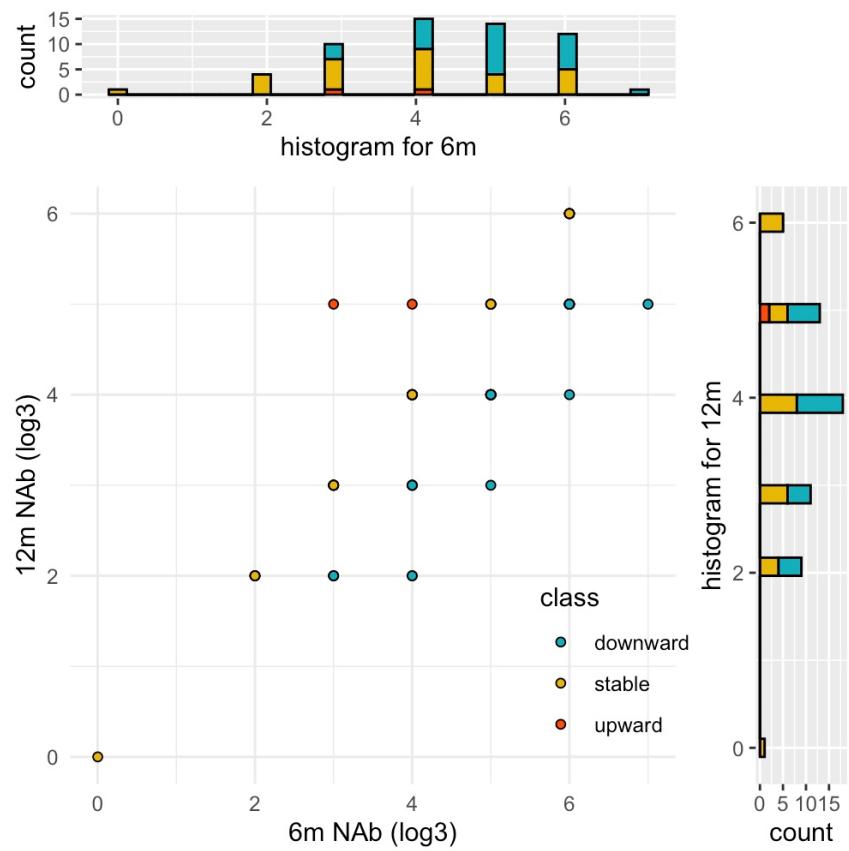
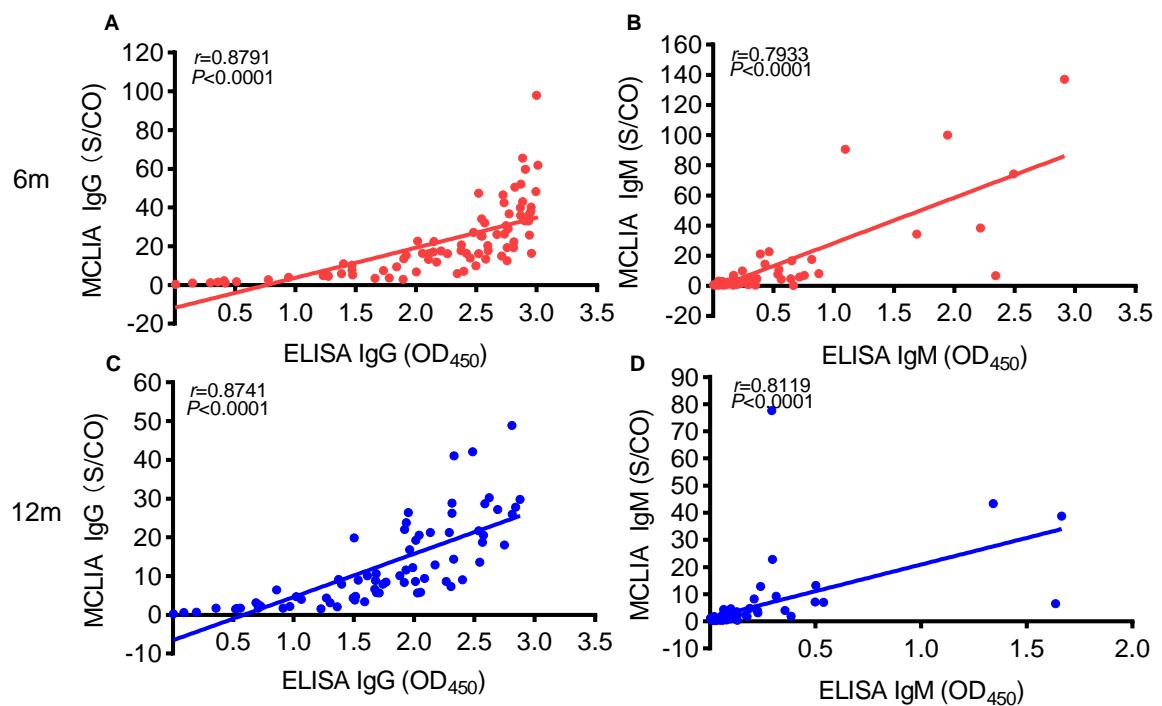


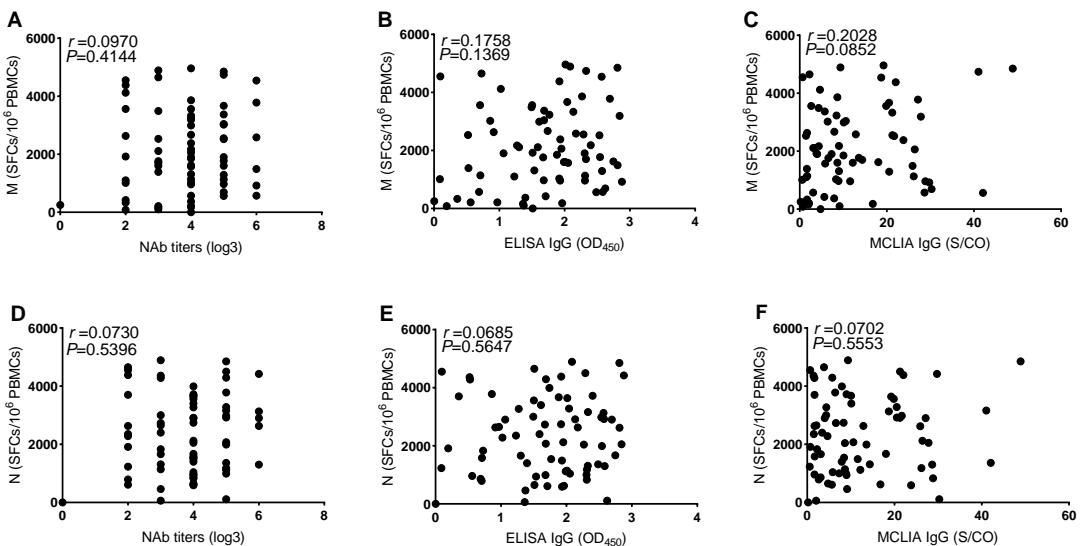
Supplementary Fig. 1: SARS-CoV-2 antibody changes of longitudinally collected sera from COVID-19 convalescents. SARS-CoV-2 spike (S) protein receptor binding domain (RBD)-specific IgG and IgM in longitudinally collected sera from COVID-19 convalescents ($n=57$) were detected by enzyme-linked immunosorbent assay (ELISA) A and C) and microparticle chemiluminescence immunoassay (MCLIA) B and D). The dash lines represent the cutoff values of the two methods, respectively. ELISA IgG cutoff=0.19; ELISA IgM cutoff=0.105; MCLIA cutoff=1.



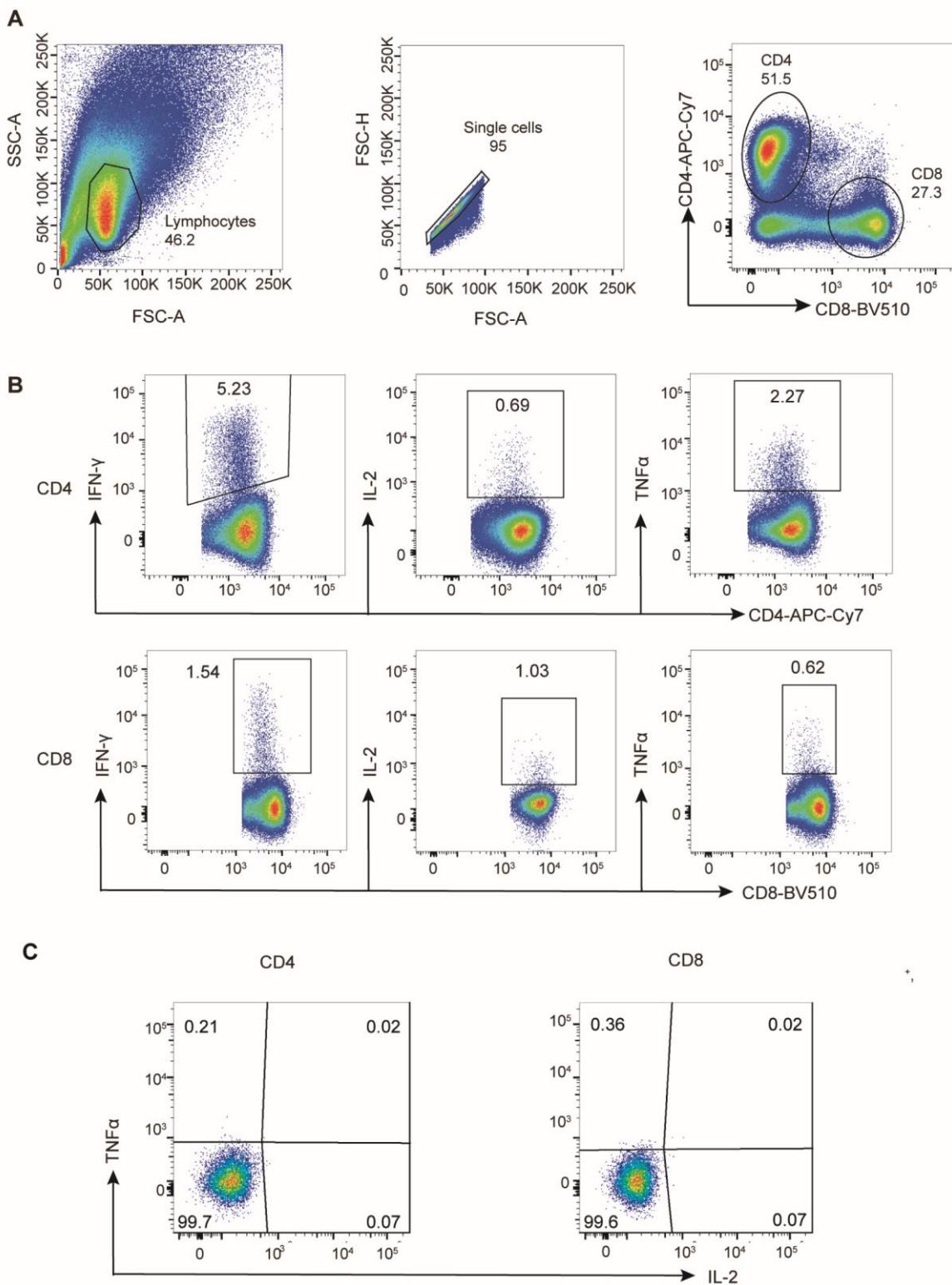
Supplementary Fig. 2: NAb titers scatterplot histogram of the 57 longitudinally followed up convalescents at 6m and 12m.



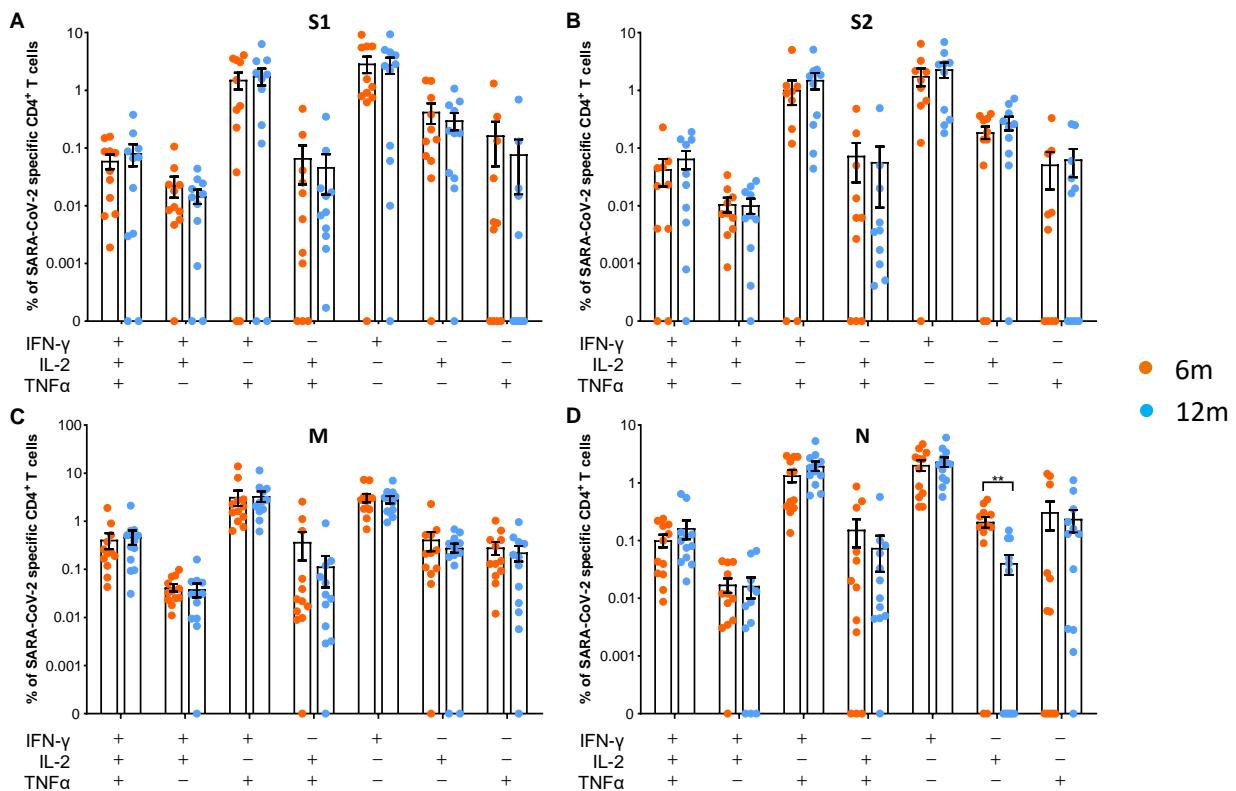
Supplementary Fig. 3: Consistency of SARS-CoV-2 antibody levels detected by MCLIA and ELISA. A) Correlation between SARS-CoV-2 IgG levels via MCLIA and ELISA among the convalescents at 6 months (n=81) post disease onset. B) Correlation between IgM levels via MCLIA and ELISA at 6 months (n=81). C) Correlation between IgG levels via MCLIA and ELISA at 12 months (n=74). D) Correlation between IgM levels via MCLIA and ELISA at 12 months (n=74). Spearman's rank correlation analysis was utilized to calculate the correlation coefficient. Each symbol represents a data point from one individual.



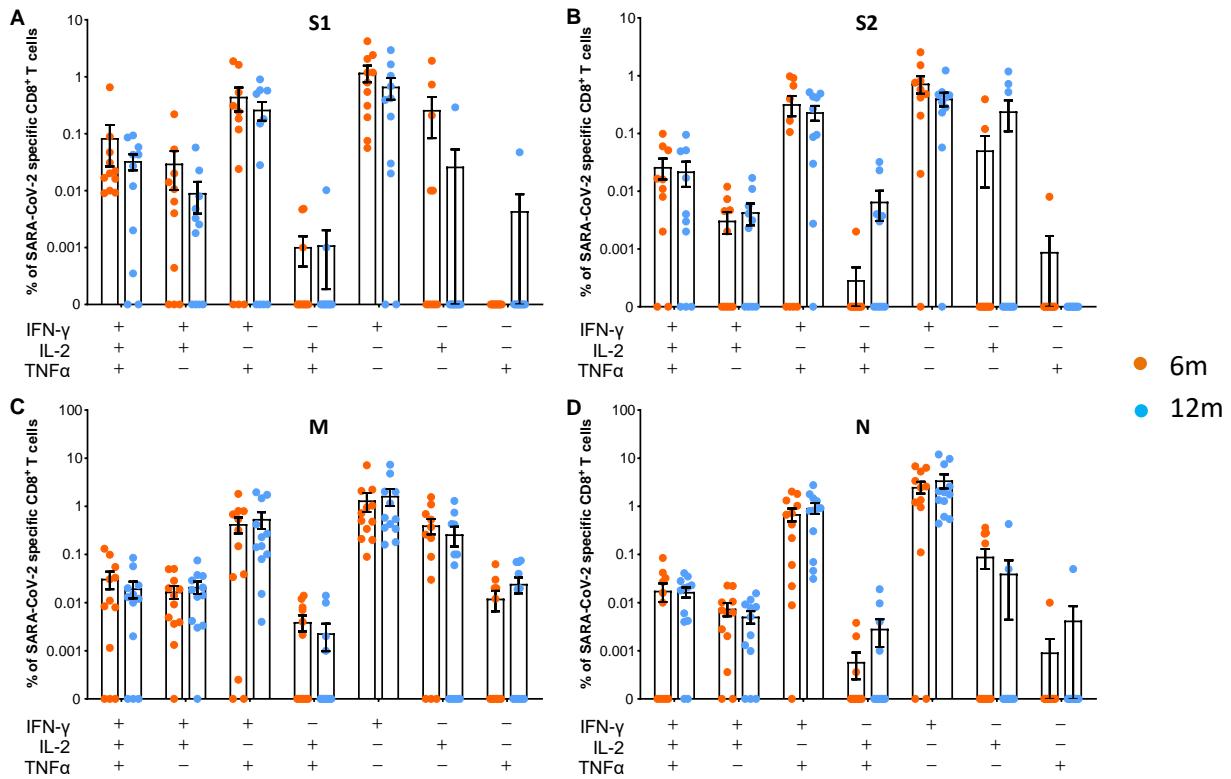
Supplementary Fig. 4: Correlations of T cell responses against SARS-CoV-2 M and N proteins and antibody levels one year post symptom onset. Here shows the correlations of T cell responses against SARS-CoV-2 M peptide pool with neutralizing antibody titers A), ELISA IgG levels B) and MCLIA IgG levels C), respectively, among the COVID-19 convalescents ($n=73$) one year post disease onset. Correlations of T cell responses against N peptide pool with neutralizing antibody titers D), ELISA IgG levels E) and MCLIA IgG levels F), respectively, one year post disease onset are presented. Correlations were assessed using a Spearman's Rank correlation coefficient (r).



Supplementary Fig. 5: Gating strategies for cytokine secreting T cell analyses. A) Gating for CD4 $^{+}$ or CD8 $^{+}$ T cells. Cells were gated for single cell particle selection by a forward side scatter gate, followed by CD4/CD8 gating. B) Gating for IFN- γ $^{+}$, IL-2 $^{+}$ and TNF- α $^{+}$ population were based on corresponding negative controls. C) Gating for IL-2 $^{+}$ and TNF- α $^{+}$ population of negative controls.

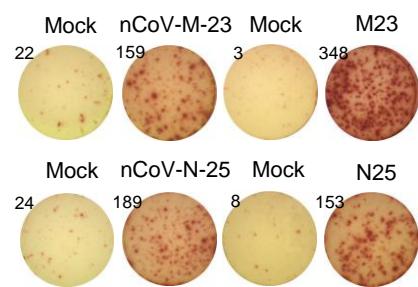


Supplementary Fig. 6: SARS-CoV-2-specific CD4⁺ T cell responses stimulated with different peptide pools of SARS-CoV-2. The PBMCs from COVID-19 convalescents (n=12) were *in vitro* cultured for 9 days under the stimulation with SARS-CoV-2 S1, S2, M, and N peptide pools, respectively. The intercellular staining was performed to analyze virus-specific cytokine secreting. Percentages of virus-specific CD4⁺ T cells secreting IFN- γ , IL-2, and/or TNF α were indicated, stimulated with S1, S2, M and N peptide pool, respectively, at time points of 6 months (red) and 12 months (blue) post infection. Data are presented as mean \pm SEM. The Wilcoxon matched-pairs signed rank test was used for comparison. Two-tailed P values were calculated. * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.



Supplementary Fig. 7: SARS-CoV-2-specific CD8⁺ T cell responses stimulated with different peptide pools. As in Supplementary Fig. 5, The *in vitro* cultured PBMCs from COVID-19 convalescents ($n=12$) were used for intercellular staining. Percentages of virus-specific CD8⁺ T cells secreting IFN- γ , IL-2, and/or TNF- α were analyzed under the stimulation with S1, S2, M and N peptide pool, respectively, at time points of 6m (red) and 12m (blue). Data are presented as mean \pm SEM. The Wilcoxon matched-pairs signed rank test was used for comparison. Two-tailed P values were calculated. * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

nCoV-M-23: PKEITV¹⁷¹**ATSRTL**SYYKL¹⁸⁰
nCoV-N-25: LLNKHIDAY³⁶²**KTFPP**TEPK³⁷⁰



Supplementary Fig. 8: Name, location, sequence and ELISpot responses of two identified SARS-CoV-2-specific CD8⁺ epitopes, i.e. M23 and N25.